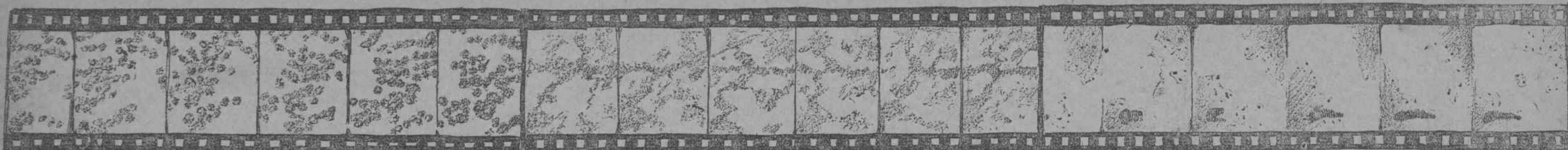


Actual Photographs of Human Blood in Circulation Made by the Micromotoscope, the Invention of Dr. Robert L. Watkins, of New York.



Showing the stream of freshly drawn blood in motion.

Circulation in a frog's foot, showing stream in motion at the rate of 2,500 per minute.

Rotifer swimming in Croton water.

PHOTOS OF LIVE MICROBES

The Deadly Germ Exhibited in Motion Like a Prize Fighter.

A photograph of a microbe in motion of the changes of a white blood cell in circulation and place these minute objects on a screen with all the accuracy of detail of a moving express train or a Robert-Fitzsimmons prize fight is the greatest achievement so far of the microscope.

Dr. Robert L. Watkins, of this city, has invented what he calls the micromotoscope, a kinetoscope for photographing cell life, action as seen in the microscopic field. The invention can not fail to be of great value in scientific research, for the microscopic world manifests much of its phenomena by motion and action as the grosser world does.

The invention is a very delicately adjusted, but simple little machine. After the object to be photographed has been placed on the glass the lens of the microscope is adjusted to a horizontal plane, a light from an arc lamp is concentrated into one end and the image from the other end is thrown through a small window upon a revolving gelatine film in a box. This gelatine film takes the pictures at the rate of 1,000 to 2,500 per minute at from 5,000 to 10,000 magnifications. These images are again magnified several thousand times when projected upon a screen, so that some of the families of microbes look as big as rats, mosquitoes and small worms and move with as much energy as these grosser creatures. The views of some of the dangerous microbes are so realistic as to make one shudder.

This is the first successful effort ever made to photograph bacteria, on account of the motion of most of the families best known to science. They have always had sketched and comparatively little is known about them.

Watkins has discovered that many of them manifest something akin to intelligence. Some of them will run to a light when a bright beam of light is flashed across the field. When given a choice of two poles of the battery they will invariably seek the negative. He also found that they would seek food and select poison with true instinct. Though he was able to observe such interesting phenomena with his eye, yet he is able to make much more thorough study of them in a series of large pictures on the screen, which can not be satisfactorily reproduced in a newspaper.

"It," said he, "bacteria possess intelligence, and their actions under certain circumstances seem to show it, why the seat of intelligence as well as the seat of life is in the cell, and neither the size nor the shape of a man's brain will explain his intellect."

He has accordingly made many photographs of various families of bacteria to discover what their actions show.

Equally interesting are his photographs of the blood in actual circulation, showing not only its capillary or arterial motion, but the changes going on in the white cells. The characters of the active blood cells, especially of the nature of life and disease. He has succeeded with the micromotoscope in photographing blood circulating in the human tissue, such as the peritoneum, the thinnest parts of the ears and the webs of the fingers. He has also photographed blood in the web of a frog's foot. Only the micromotoscope can cope with such images as are shown in circulating human blood, for the stream is so fast that the eye cannot begin to keep up with it, and the changes taking place in the white blood cells are as rapid in proportion. This photo of actual blood circulation is as fine as any crude, however, for the action is too great for the capacity of the camera. But its capacity can be so increased as to photograph almost any conceivable action. Some of the pictures when shown on the screen showed a stream of blood moving like a mill tail, giving now and then a glimpse of a white cell like a white cap on the sea constantly changing shape, throwing out and taking in its arms like an octopus, seizing microbes in its path as an octopus would a skid. The stream through which one must look hides, to a large extent, the white cells from view, though could be observed to show that freshly drawn blood through it moves very much more slowly than actual circulating blood. In its cell changes it behaves very much in the same manner.

In disease the unobscured changes in the white cells, that is the throwing out and taking in of arms, take place with much less energy than in a state of health. The changes are often so minute that they will escape the attention of the eye, but will be seen in a picture. Especially will they become prominent in a succession of pictures, and such pictures cannot fail to become of considerable value in the study of disease when they are thrown upon the screen, first slowly and then more rapidly for different points of view for comparison. The micromotoscope will be indispensable for the study of unobscured life in water when action takes place with such energy. The phenomena of this sort of action are yet as profound a mystery as that of bacteria. Undoubtedly unobscured seem to possess intelligence of as high an order as bacteria.



From a photograph.

John Pooler, of Waterville, Me., who hasn't been to bed for twenty years.

John Pooler, 104 Years Old, Never Goes to Bed.

JOHN POOLER, of Waterville, Me., is one hundred and four years old. He is the oldest of five children, of whom four are still living, to wit: Ephraim, aged one hundred and two; Frank, aged ninety-nine, and George, aged seventy-six. This gives an average of ninety-five years apiece for the four brothers. The average is much reduced by George, who is a son by a second wife. The record of this family goes to prove that long life is hereditary in families.

Mr. Pooler married, somewhat late in life, Sophia Lacombe, by whom he has had thirteen children, of whom five are now living. Mr. and Mrs. Pooler have eight great-grandchildren.

Mr. Pooler has not been to bed for twenty years, owing to a difficulty he has in breathing when lying down, but is otherwise very well, and expects to live for many years.

Four Fine Old American Centenarians.

An Instructive Object Lesson for Those Who Assert That This Is the Age of Degeneracy and Fast Living.

A Hundred Years Old, 80 Years a Democrat.

JUST a century old is John Smith Prather, of Atlanta, Ga. He is a man of intelligence and education, and has a thorough knowledge of



From a photograph.

John Smith Prather, of Atlanta, Ga., who once saw George Washington and Thomas Jefferson.

the history of the United States, with many of the most important events in

which he is personally familiar.

His father was one of the original founders of Georgia, and was a leader in the movement of the thirteen colonies to throw off the British yoke.

Mr. Prather saw George Washington, Thomas Jefferson and other great men of revolutionary times. He was personally acquainted with General Andrew Jackson, with whom he fought at the battle of New Orleans. Later he was a political acquaintance of John C. Calhoun.

Mr. Prather has voted the Democratic ticket for eighty years, and hopes to do so several times more.

Michael Mooney Drinks and Smokes at 101.

SINCE his one hundred and first year, Michael Mooney has been an inmate of the Home of the Little Sisters of the Poor, at Eighteenth and Jefferson streets, Philadelphia. He is now one hundred and four years old.

Michael was born in the County Tipperary, and before he came to America witnessed some of the bloody scenes of the great rebellion of 1798. He cannot read or write, and on that account his memory is remarkably good.

He has always used whiskey freely, but he strongly condemns drunkenness. His own capacity is so great that he says he has never been properly drunk but once in his life.

He uses tobacco in all its forms, and finds it an excellent thing. Health has been so perfect that he has never had a day's sickness in his life. His hair is thick and all his senses good.

Born a Slave 104 Years Ago, Now a Pensioner.

ANTHONY EDWARDS is one hundred and four years old. He was born a slave, and lived to vote and draw a pension as a veteran soldier of the Union



From a photograph.

Anthony Edwards, of St. Louis, preacher, who draws a pension from Uncle Sam.

army.

Uncle Anthony is now living at No. 4300 Maffitt avenue, St. Louis. He was born in Louisa County, Va., his parents being then recent importations from Africa.

In his time Anthony was an eloquent and emotional preacher of religion. He is a Baptist.

When the war broke out he ran from his owner and enlisted. He was found to be too old to fight, but he remained on the army rolls for a year and was honorably discharged. For his patriotic intentions he receives a pension of \$36 a quarter. During his service he did his best for the cause by preaching.

He is admirably preserved, except about the feet, which are rheumatic.

Found an Inexhaustible Lake of Oil.

IT is reported from Alaska that a great lake of petroleum has been discovered there. The supply promises to rival that of the Pennsylvania oil fields.

Last November two prospectors, one named Eddy, while scouring extreme Northern Alaska and up very near the Arctic Circle, came across a lake several miles wide and in places eight or ten miles in length, and of almost impenetrable depth, of what appeared to be crude oil or petroleum. From a hasty examination it appeared to them that the lake was fed by an innumerable number of oil springs in the sands and mountainous banks forming it. Further search revealed great veins and ledges of coal.

With characteristic secretiveness the two prospectors took ample samples both of the oil and coal deposits. They came at once to Seattle and reported the result of their discovery to Charles F. Munday, of the law firm of White & Munday. He had tests made of the petroleum, which was pronounced productive, first-grade coal oil. He was informed, in short, that the great oil fields of Pennsylvania, Ohio and Indiana yielded no better oil; that if he had a sufficient quantity he needed no other guarantee of a fortune.

Munday enlisted a number of friends and citizens of Seattle, among them T. J. Hamilton, who was United States Marshal for the Territory of Washington during the first term of Grover Cleveland. Secretly they organized a company and sent five or six men, including three or four of the best oil and coal experts of the East, to examine the discovery made by the prospectors. These men returned to Seattle on the last Alaska steamer, the Topeka.

Their report, in brief, is that this lake constitutes the greatest body of oil ever discovered. They pronounce it almost pure oil, and say that it is fed by an innumerable number of springs, apparently as lasting as the ages. Their stories are almost incredible, and but for the established reputations and reliability of the men would not be believed.

The coal deposits surrounding the lake, according to these authorities, are apparently inexhaustible. The coal is of a good grade and of a very shallow depth, and the surface indications are that there is enough of it to supply fuel for the whole of the United States for an indefinite number of years.

Is George Francis Train the Real Owner of 4,000 Lots in Omaha?

CITIZEN GEORGE FRANCIS TRAIN has a claim to a large section of the flourishing city of Omaha, Nebraska. It is generally valued at between \$20,000,000 and \$30,000,000.

It is true that Citizen Train is generally regarded as insane and has once been adjudged so, and it is this very fact that gives his claim its value. That it is taken very seriously by one New York lawyer may be seen from the annexed signed statement of Mr. Clark Bell, the well-known secretary of the Medico-Legal Society.

Citizen Train is organizing for trouble. He is represented in Omaha by ex-Mayor George P. Bemis, who states that he is backed by a syndicate of capitalists.

Mr. Bemis announces that he is preparing to bring an action on behalf of the Citizen. If this is successful, it will transfer from the present owners to the Citizen and his backers, some 4,000 city lots. They include banks, hotels and many fine residences.

Here is the history of Citizen Train's claim to Omaha property in brief. In 1895 he bought from Herman E. Korintz and Samuel E. Rogers about 500 acres of land in the eastern part of the city. The purchase price was \$100,000, on which about \$38,000 was paid. Foreclosure suit was brought for the balance in 1878, at which time Citizen Train had been declared insane by a New York court. The property was sold.

A mortgage on an insane person's property cannot be foreclosed without the appointment of a guardian to represent him legally. That is the law in New York, and is essentially so in all other States. No guardian was appointed in Train's case. Therefore, it is said the sale of his property was illegal.

The Citizen was found by a Sunday Journal reporter at his favorite seat in Madison Square. It was a beautiful Summer day and the most beautiful of the city's squares was glorious with foliage. The birds sang and the fountains played. The Citizen was amusing the children, as usual, and looked very healthy.

He showed a keen appreciation of the value of his insanity. In order to impress the strong point in his claim on the public he wrote out the following supposed conversation between a Judge and the foreman of a jury:

"Conversation!"
Foreman of the Jury—"May it please Your Honor, was Citizen Train legally and medically declared insane?"
"Yes," says Judge. "Had he property then?" "Yes!" "Had he trustee?" "No!" "Guardian?" "No!" "Administrator?" "No!" "Committee?" "No!" "Commissioner of Lunacy?" "No!" "Case dismissed! Non-suited!"
"Junnan—What is his position now?"
"Judge—Nation has three wards—Lunatic,

Convict, Idiot! They can't vote and have no standing."

"Citizen Train is not Idiot! Not Convict! But Legal Lunatic! Therefore, Ward of Nation!"

"Does Statute of Limitations apply?" "No!" "If he dies, what then?" "Children inherit!" "If they die?" "Grandchildren!"

Lawyer Clark Bell, of No. 39 Broadway, made the following statement as to the legal aspect of Citizen Train's mental condition:

"Mr. Train was indicted for publishing an obscene publication called the Train League, a newspaper which contained extracts from the Bible and from a standard religious work.

"I was his counsel. The District-Attorney of this city instituted, for the first time in the history of jurisprudence, proceedings in which he alleged the insanity of Mr. Train under a law recently passed permitting him to do so. The case presented the singular anomaly of the District-Attorney claiming that a defendant was insane and the latter insisting that he was not. The District-Attorney could have nolle prosequed had he wished to do so.

"The proceeding was carried on before Judge Charles P. Daly and a special jury, and was really a cause celebre, and occupied five or six weeks. On that trial Dr. Hammond, Dr. Ralph L. Parsons and other eminent medical men swore that he was insane, but he secured a verdict against his insanity, and the case then proceeded to trial on the indictment.

"I did not plead insanity on the trial, but it could be proved on the general issue as the law then stood, and I introduced the same witnesses that the District-Attorney had introduced. When arraigned Train insisted on pleading guilty.

"Chief Justice Noah Davis refused to accept the plea and ordered a plea of not guilty to be entered, and the trial then went on. At the close of my evidence the District-Attorney refused to introduce any evidence on the question of Train's sanity and conceded that he was insane. Judge Davis then took the case away from the jury and ordered them to find a verdict of not guilty upon the ground of insanity. I protested and demanded that the jury pass upon the facts and evidence. The Court overruled me and directed a verdict. I demanded that the jury be polled. Thereupon three members arose and stated that they refused to find the verdict. Judge Davis ignored this action and directed a verdict to be entered of not guilty on account of insanity, and he then ordered that the defendant be placed in a lunatic asylum. Train denounced him before the court in a terrible manner.

"I understand it to be a fact that the mortgage on the lots which Mr. Train then owned in Omaha—about 4,000 in number—was subsequently foreclosed and that they are all now within the city limits of Omaha.

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